

Spontaneous Occlusion of the Sinus Node Artery: A Case Report

Diop KR^{1*}, Mingou JS¹, Beye SM², Ndiaye PG¹, Diop CMBM¹, Diouf Y¹, Diallo SD¹, Akanni S¹, Sarr SA¹, Fatou AW¹, Bodian M¹, Ndiaye MB¹, Kane AD^{1,2} and Diao M¹, Kane A³

¹Cardiology Department, Aristide Le Dantec Hospital (Dakar) Senegal.

²Cardiology Department, Regional Hospital of Saint Louis Senegal.

³Cardiology Department, Dallal Jamm Hospital (Dakar) Senegal.

*Correspondence:

Dr. DIOP Khadimu Rassoul, Cardiology Department, Aristide Le Dantec Hospital (Dakar) Senegal.

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ABSTRACT

Introduction: Occlusion of the sinus node artery is a rare situation. It is responsible for sinus node dysfunction and often occurs accidentally during percutaneous coronary intervention of a proximal lesion of the right coronary artery

Case Report: This is a sixty-year-old woman with high blood pressure treated by dual therapy (an enzyme conversion inhibitor and a thiazide diuretic), who presented to the cardiological emergency room for a typical angina pain that had been evolving for 48 hours without a lull. Her clinical examination was normal apart from grade 3 arterial hypertension. The 18-lead surface electrocardiogram showed an electrical left ventricular hypertrophy with undershift of the ST segment in lateral and posterior territories, with an overshift of the ST segment in the antero-septal without any sign of necrosis. Biologically, the ultra-sensitive troponinemia was 88 times normal. The diagnosis of NSTEMI with troponin was retained with an intermediate ischaemic risk. Transthoracic Doppler echocardiography showed concentric hypertrophy of the left ventricular walls and dyskinesia of the right ventricle infero-apical wall. The coronary angiography showed an occlusion of the sinus node artery and a left coronary artery atheromatous with an intermediate lesion in the middle segment of the anterior interventricular artery.

Conclusion: The present clinical case highlights the diversity in the expression of a sinus node artery occlusion that can occur spontaneously outside of a percutaneous coronary intervention.

Keywords

Spontaneous occlusion, Sinus node artery, NSTEMI.

Introduction

Occlusion of the sinus node artery is a rare situation. It is responsible for sinus node dysfunction and often occurs accidentally during percutaneous coronary intervention of a proximal lesion of the right coronary artery [1]. Cases of spontaneous occlusion of the sinus node artery are extremely rare and poorly described in the literature. We report the case of a sixty-year-old woman admitted to the emergency room for NSTEMI with high Troponin, and whose coronary angiography revealed a sinus node artery occlusion.

Case Report

This is a sixty-year-old woman with high blood pressure treated by dual therapy (an enzyme conversion inhibitor and a thiazide diuretic), who presented to the cardiological emergency room for a typical angina pain that had been evolving for 48 hours without a lull. Her clinical examination was normal apart from grade 3 arterial hypertension.

The 18-lead surface electrocardiogram showed an electrical left ventricular hypertrophy with undershift of the ST segment in lateral and posterior territories, with an overshift of the ST segment in the antero-septal without any sign of necrosis (Figures 1 and 2). Biologically, the ultra-sensitive troponinemia was 88 times normal.

The diagnosis of NSTEMI with troponin was retained with an intermediate ischaemic risk.

Transthoracic Doppler echocardiography showed concentric hypertrophy of the left ventricular walls and dyskinesia of the right ventricle infero-apical wall.

The coronary angiography showed an occlusion of the sinus node artery and a left coronary artery atheromatous with an intermediate lesion in the middle segment of the anterior interventricular artery (Figure 3).

Discussion

Previous experimental studies have shown that occlusion of the sinus node artery produces a variety of supraventricular arrhythmias ranging from simple bradycardia to sinus arrest [2]. It is most often iatrogenic secondary to angioplasty of the right coronary artery or proximal circumflex artery [3]. More than 50%

of the coronary side branches are at risk of iatrogenic occlusion during percutaneous coronary intervention, particularly the arteries of small diameter such as sinus node artery [4].

The interest of this case resides first of in the "spontaneous" nature of the occlusion of the sinus node artery, its mean that not during percutaneous coronary intervention as described in the literature ; but also in the particularity of its expression, marked by an undershift of the ST segment in lateral and posterior territories, and an overshift of the ST segment in antero-septal without anomaly of the sinus rhythm on the electrocardiogram; and echocardiography by dyskinesia of the right ventricle infero-apical wall.

Conclusion

The present clinical case highlights the diversity in the expression of a sinus node artery occlusion that can occur spontaneously outside of a percutaneous coronary intervention.

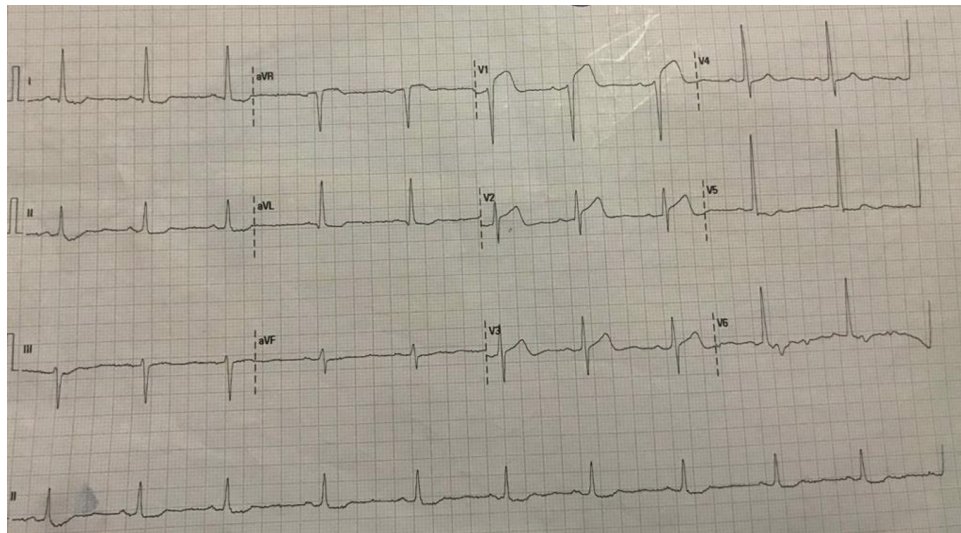


Figure 1: ECG showing electrical left ventricular hypertrophy with under shift of the ST segment in the lateral territories, with an over shift of the ST segment in the antero-septal territories without any sign of necrosis.

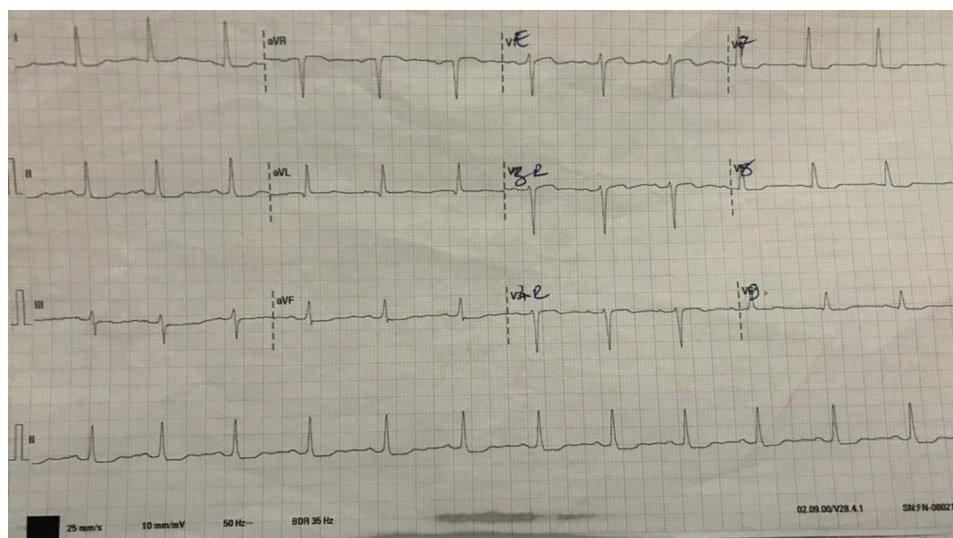


Figure 2: ECG showing undershift of the ST segment in posterior territories of left ventricle.

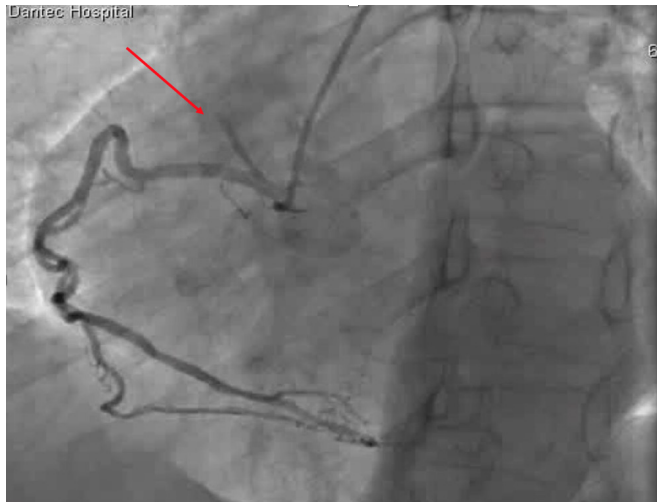


Figure 3: Coronary angiography showing an occlusion of the sinus node artery.

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